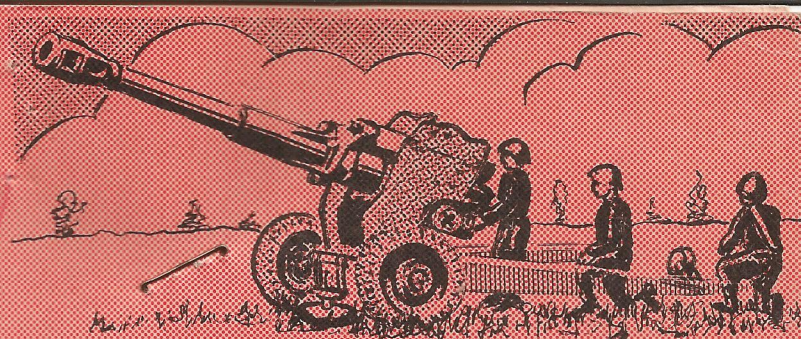


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ARMY

TECHNICAL INTELLIGENCE

392

JUL 1969

REVIEW

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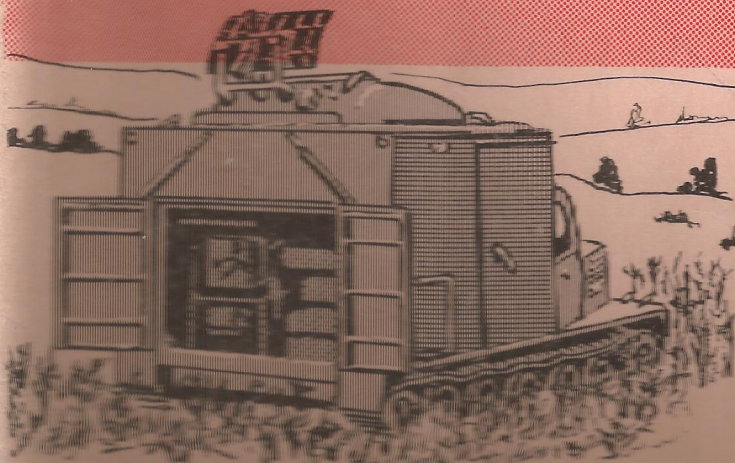
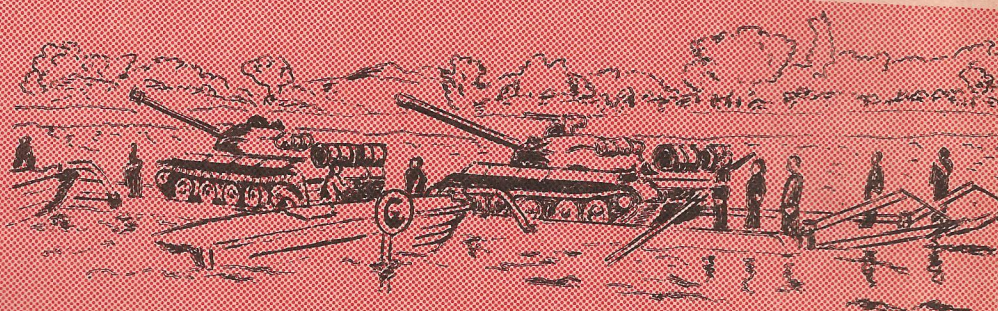


Armour School

17 JUL 1969

INFORMATION BUREAU

APRIL 1969



Nº93

SECRET

ARMY TECHNICAL INTELLIGENCE REVIEW No 93 (SECRET)

APRIL 1969

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SECRET

FOREWORD

We would draw your attention to a change in layout starting with this edition. Each article is printed separately in such a way that you can cut up the book and file it under subject headings if you find it easier for reference this way with your own particular system. It is suggested that they can be added to the "Digests" on special subjects as appropriate and, when a new up-to-date "Digest" on that subject is issued, the previous one plus "Army Technical Intelligence Review" articles can be destroyed. Thus the quantity of bumf filed will be kept in check but the up-to-date position on any subject will always be available.

We are happy to report that we are becoming better known and more frequently used than in the past. Our transistor crystal ball has been almost overheated by work lately and we hope it is making reliable predictions. However these increased calls on our limited time do tend to hold up other jobs and we must admit that even allowing for the reduction in the frequency of issues of "Army Technical Intelligence Reviews", we are lagging behind in the compiling of single subject "Digests". It now looks as if our Signals issue on the new lines will not be out for another six months.

Changes in staff have brought some new names to desks. Roy Hurn has become the Branch G1 and is replaced on non-communications electronics by Roger Bacon; Fred Hall, our man from Washington, is moving to the Artillery desk to replace Dick Hudson, who leaves soon; Fred is replaced at MT by Stanley Ball, exchanging a cushion of air for a hard Whitehall chair; Tony Good has left us and, in the interregnum before his successor comes, Rex Clark our ambidexterous Australian is driving both the AFV and his own Sapper desks.

We all remain here to hear from you about any goodies you may find or help we can give you.



Col Tech Int(A)

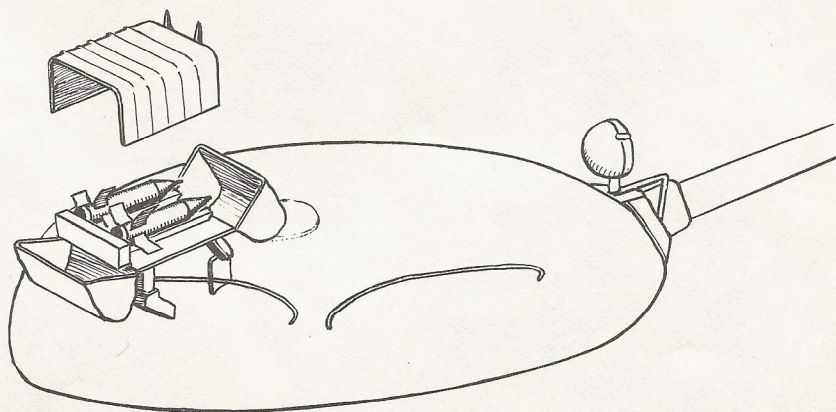
1. AFV Notes (SECRET)

Soviet T-62 with possible GW attachment



Six T-62s of GSFG with the attachment shown were seen in East Germany at the time of the Soviet invasion of Czechoslovakia. From the size and position of the boxes it is probable that these contain anti-tank guided weapons mounted in a manner roughly similar to those on the Vickers or AMX GW tanks.

The diagram below shows a possible arrangement for two SAGGER ATGMs; three would be a maximum in the space available.



Possible GW arrangement

As well as giving an additional three rounds of ammunition, the SAGGER ATGM would increase the effective range to slightly more than 2000 m and would enable fire from turret down positions. NONSENSE

Chinese Light T-62

The Chinese Communists have produced a light tank weighing 21 tons and armed with an 85-mm gun, a 12.7-mm AAHMG, a 7.62-mm Co-axial MMG and a 7.62-mm Hull MG. This tank appears to be a replica of the T-54/T-59 series but with reduced dimensions. The photograph shows a parade in Peking, in the front of which are two T-59 Medium Tanks and immediately behind them are the Chinese Light T-62s.



The Chinese Light T-62s are at the rear

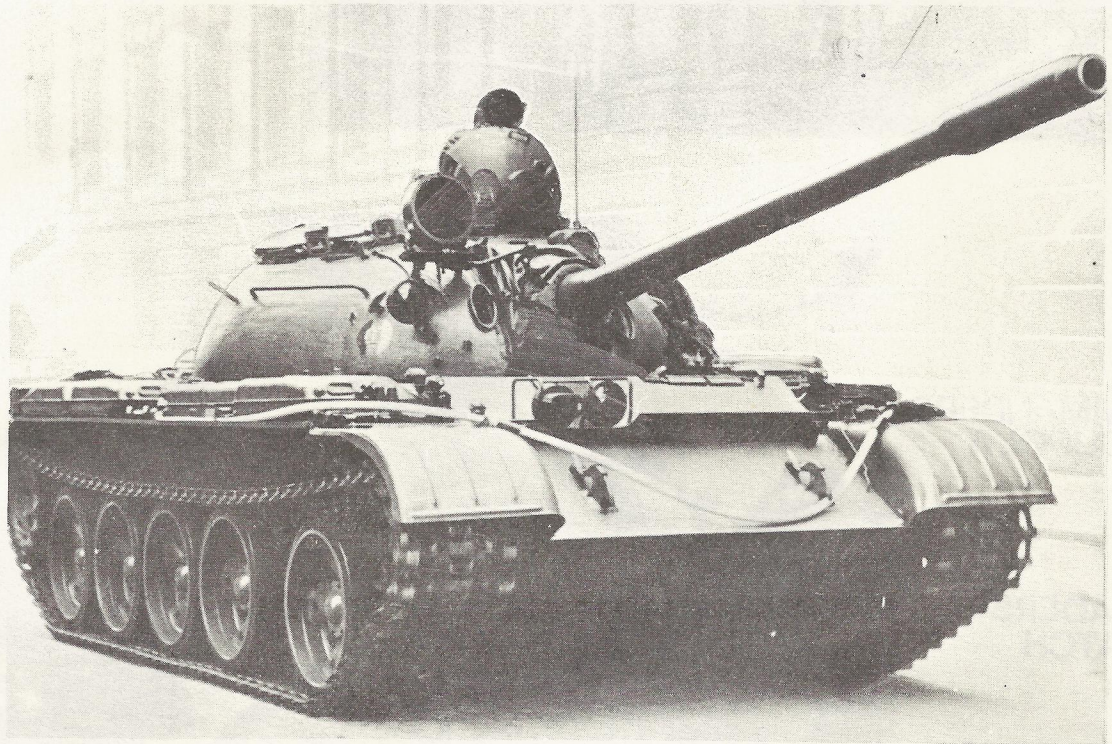
It is thought that the Chinese Light Tank T-62 has been in service in reasonable numbers for several years.

Legend for illustration on page 4.

Points of difference to note are:

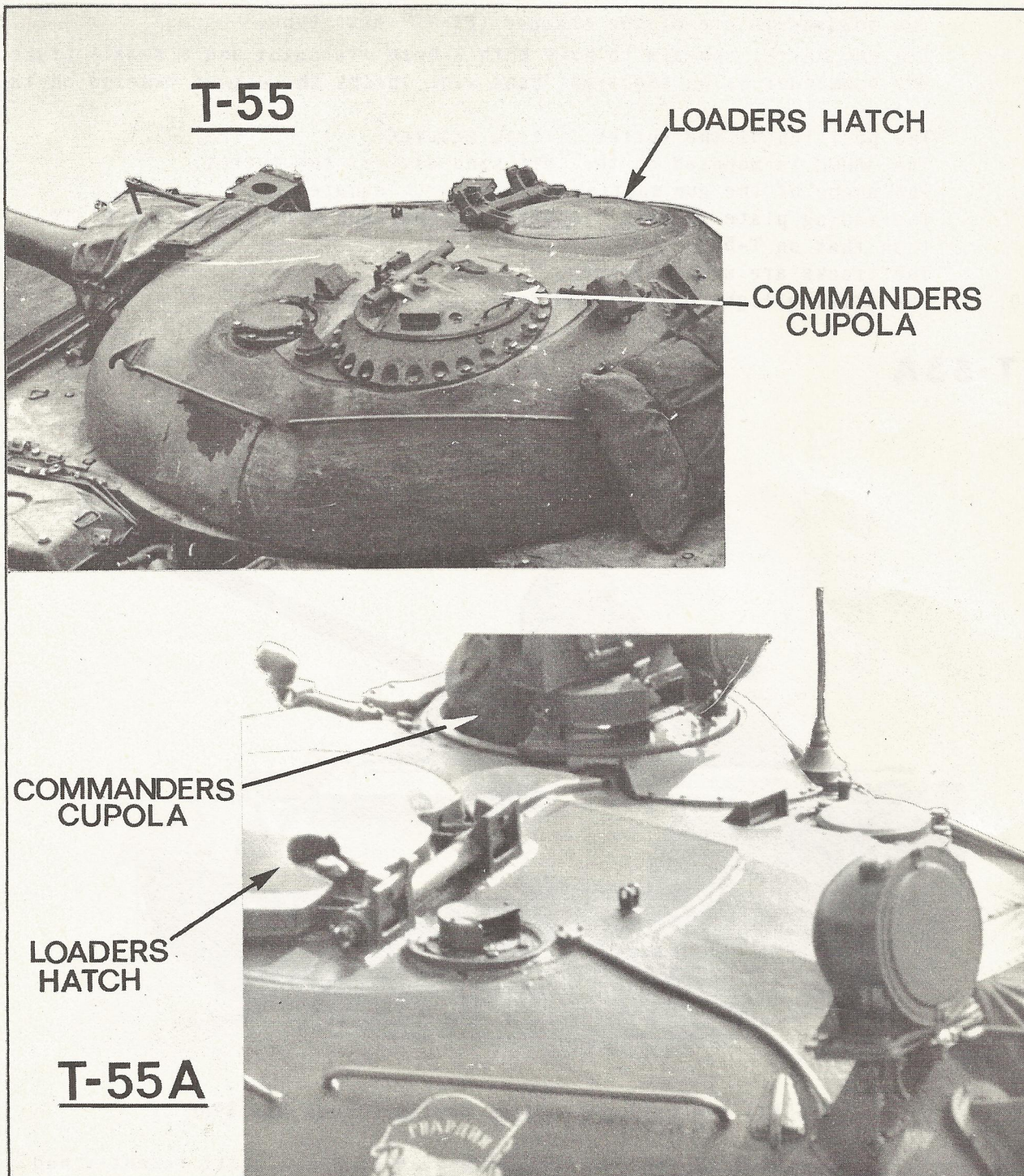
1. The roadwheels are of the stamped (PT-76) disc type.
- 2 & 3. The gun barrel appears to have both a bore evacuator and a muzzle brake.
4. The commander is on the right hand side whilst the driver remains on the left.
5. The position of the turret lifting bracket.
6. The AAHMG is mounted on the left hand side of the turret.
7. The shape of the gun mantlet cover is much squarer.
8. The wading plate is much broader in comparison with the glacis plate than that on T-59.
9. The tracks are much narrower.
10. The driving light bracket and cover is different.

T-55A



T-55(2), now called T-55A, on Berlin Parade May 1968

The latest version of the Soviet T-55 Medium Tank has until recently had the provisional nomenclature T-55(2). The correct designation of this tank has now been established as T-55A. The only external differences apparent between T-55 and T-55A are the design of the loader's hatch and the fairing round the commander's cupola as shown in the illustrations on page 6.



External differences of T-55 and T-55A.

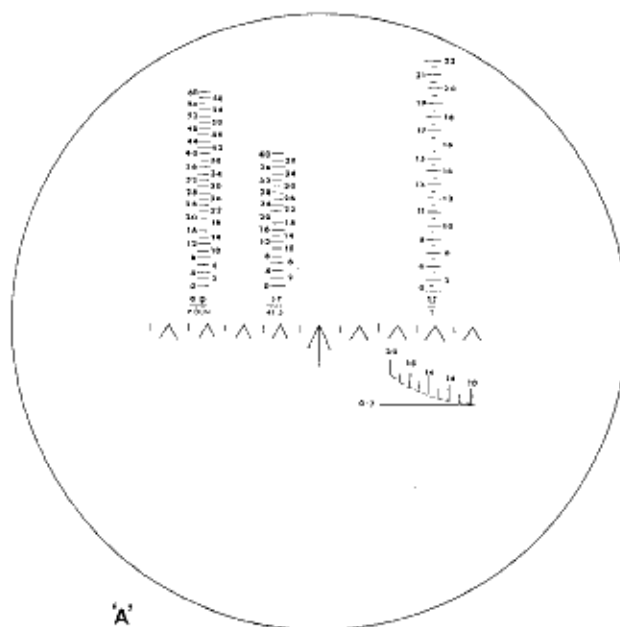
Apart from some minor structural modifications inside T-55A, the main improvement over T-55 is that it has better protection against nuclear radiation. This is achieved by the addition of a "lead-asbestos" lining to the interior of the fighting compartment.

Soviet Tank Ammunition

T-62 Ammunition types

Recent pictorial evidence suggests that in addition to the 115-mm spin stabilised HEAT and APDS rounds with which the T-62 is already credited, a third type of round - probably HE fragmentation - is also carried. No details of this round are available at present.

T-55 HEAT Round ZBK-5



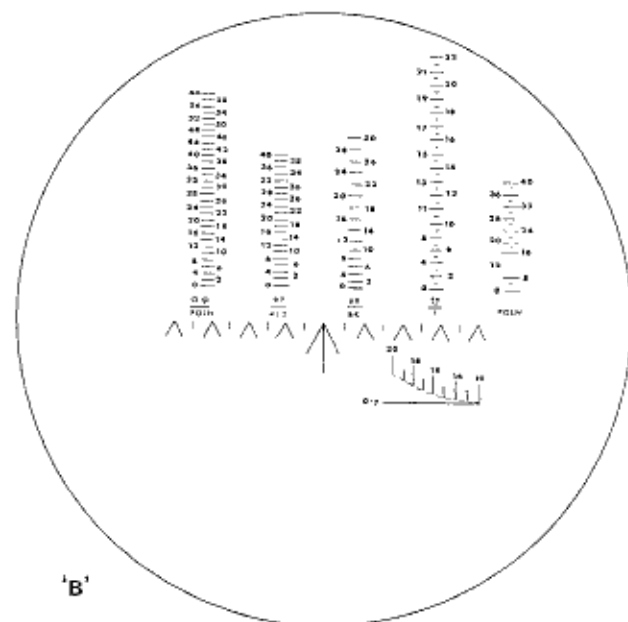
'A'

Sight Fields of View

'A' = TSh2B-22

'B' = TSh2B-32P

T-55 SIGHT GRATICULE PATTERNS



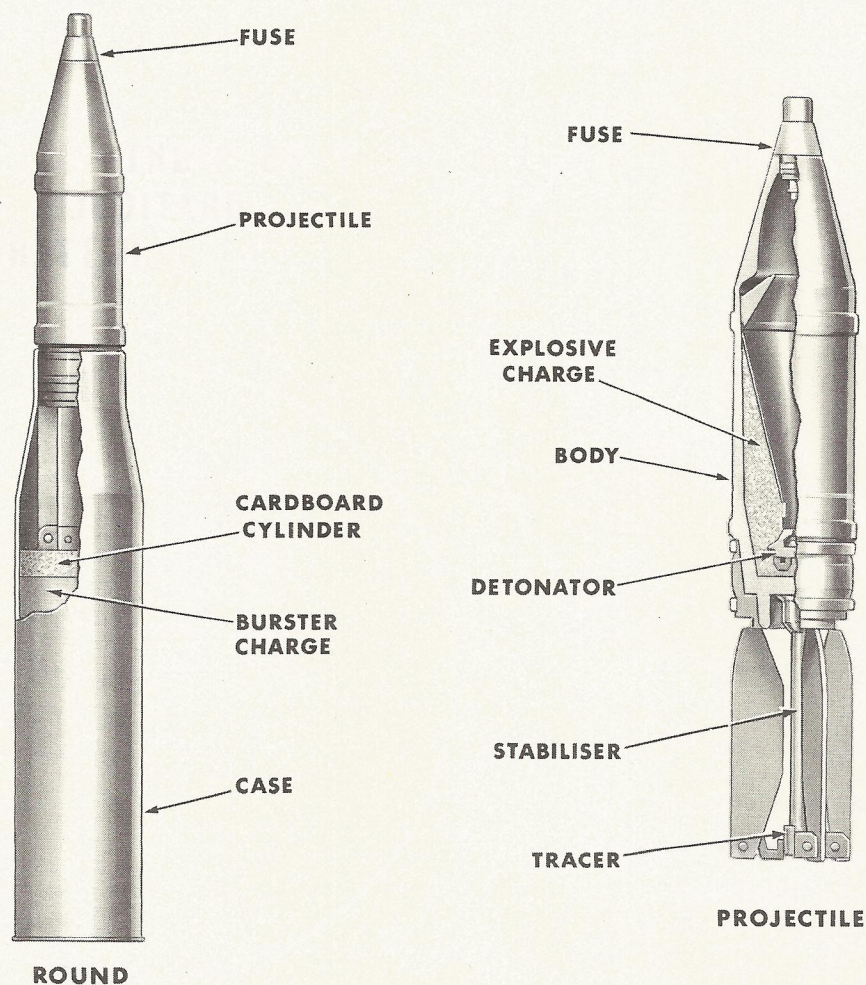
'B'

The normal T-55 sight graticule pattern (A) shows range scales for APT, HE and MMG rounds only. However some T-55s have been seen to have a pattern which includes two further scales marked as "HEAT" and "Sub-calibre" (B). Sub-calibre probably refers to 23-mm training ammunition.

The 100-mm HEAT round illustrated on page 8 could be used in any T-54, T-55 or T-55A fitted with the correct graticule pattern.

HEAT Round ZBK-5

The hollow charge non-rotating projectile ZBK-5 (ZBK-5M) is fitted with fuse GPV-2. Its purpose is the destruction of tanks, SP guns etc. Targets are destroyed by direct fire at ranges of up to 3000 m. It comprises: body, explosive charge, detonator, stabiliser, tracer and fuse. The weight of the projectile is 12.2 kg and the muzzle velocity is 900 m/sec.



The spin imparted by the 100-mm D-10T series tank gun to the HEAT round is taken up by a revolving outer cover whilst stability during flight is maintained by rear mounted fins which snap out as soon as the projectile leaves the gun barrel. A picture of a Soviet 122-mm round employing the same principles is also shown on page 9.

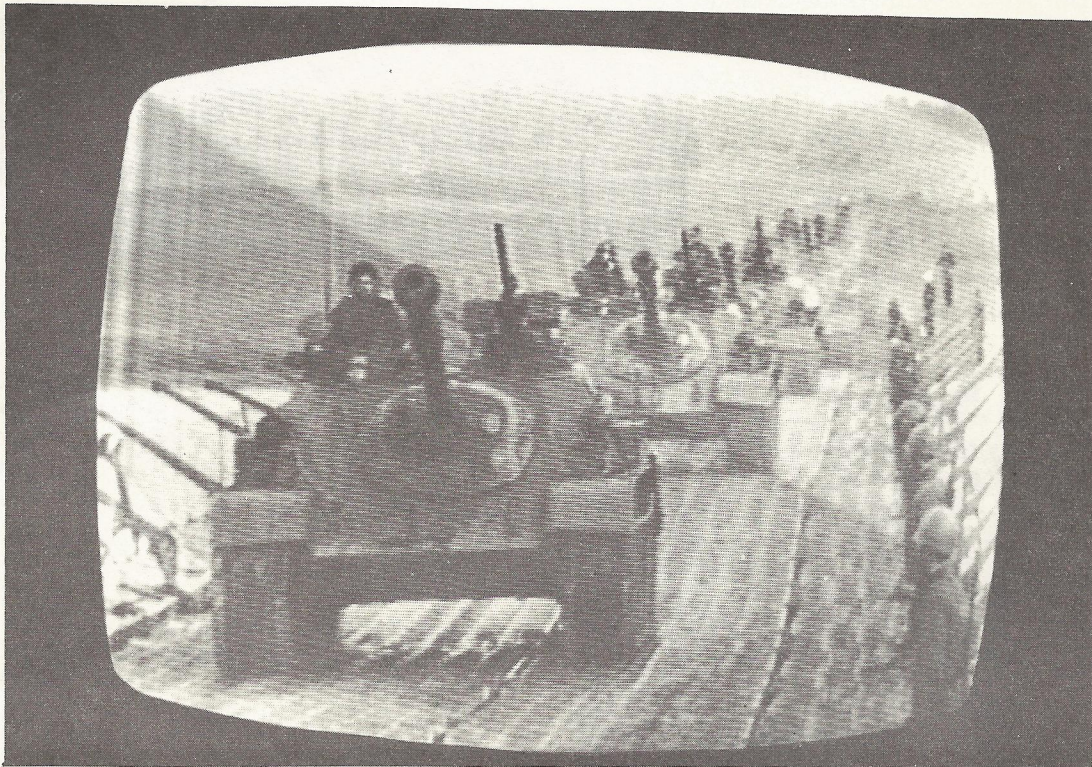
Armour penetration of the ZBK-5 HEAT round is in the order of 400 mm at 0°.

Although the chance of a kill taking into account gun accuracy and lethality of the round is unlikely to be high by Western standards, its use will undoubtedly improve the effectiveness of the Soviet medium tank against armoured targets.



122-mm HEAT round

SU-100 M1968(?)



Possible new Soviet Assault Gun

This photograph was taken off a Moscow television programme in March 1968. It shows a number of tracked assault guns of an unknown type crossing a PMP assault bridge reputedly during Exercise DNIEPR during the autumn of 1967.

The AFV depicted appears to be based on a medium tank (T-54/55) chassis and to have a main armament in the region of 100 to 130-mm. It has a probable 14.5-mm Anti-Aircraft HMG mounted on the superstructure and a 7.62-mm co-axial MMG. Contrary to normal Soviet practice the driver is seated on the right hand side of the hull and his hatch can be seen on top of the superstructure. A possible infra-red lamp may be mounted behind the driver's head and to his right. The main armament has both a bore evacuator and a muzzle brake. This arrangement, similar to that of the T-10 Tank's 122-mm gun, indicates that the assault gun's main task will still be anti-armour.

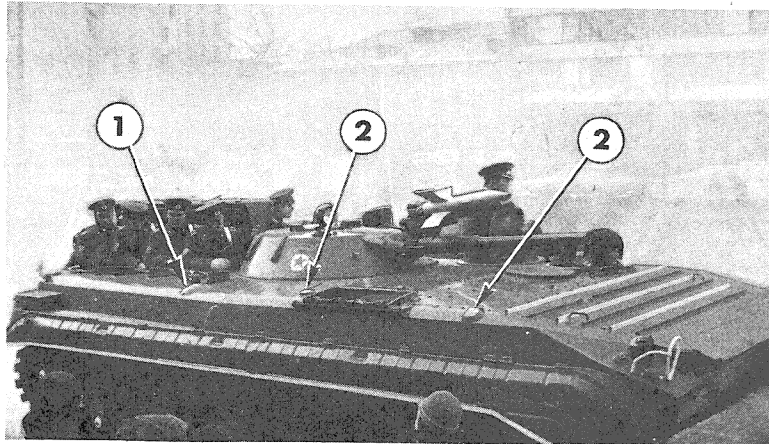
No further sightings of this vehicle have been made and its status (if it has one) in the Soviet forces is unknown.

Modifications to AAICV M1967(?) on November 1968 Moscow Parade

The AAICV M1967(?) made its debut on the 1967 Moscow 50th Anniversary Parade. Since that date it had not been seen again, except in Soviet press pictures, until the November 1968 Parade. Twenty of these vehicles were paraded and the following modifications - which can be seen in the illustrations were observed:

1. The ventilators on the hull roof on each side of the rear of the turret have been moved to the outside edge of the decking.

2. A new outlet port has appeared on the right hand top edge of the super-structure in front of the main engine exhaust. This is likely to be one of the outlets for the bilge pump system; a second outlet is indicated on the illustration (2).



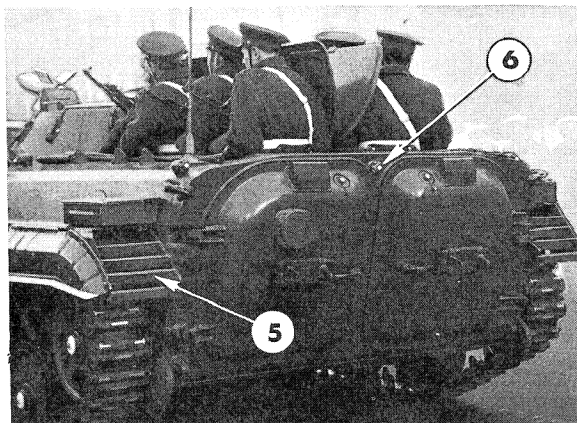
3. The forward firing port on each side of the hull has been re-designed and its hinge re-located so as to give a better field of fire. It is thought probable that these ports are for the two PK GPMGs carried by the "landing force".

4. Carrying straps have been added to the brackets on the turret.



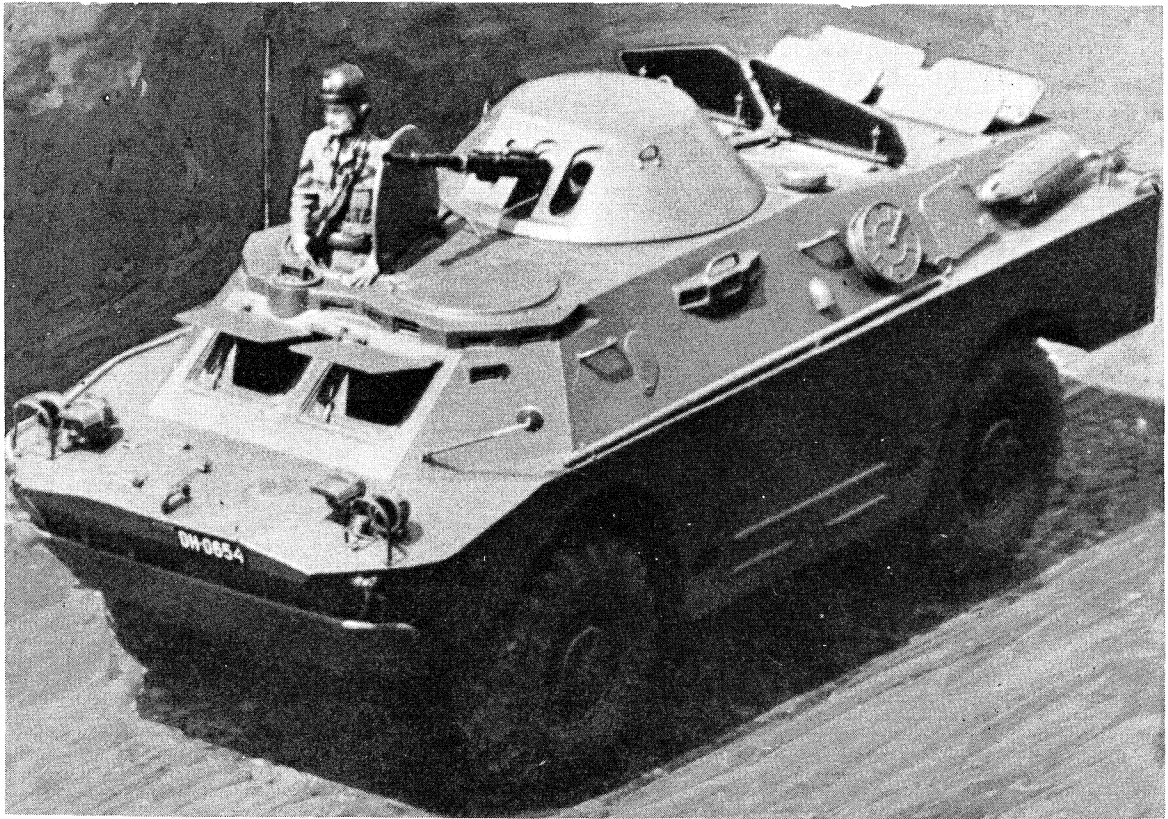
5. The number of deflecting vanes has been reduced from six to four. Probably to reduce likelihood of damage.

6. An additional convoy light has been added above and between the rear doors and a reflector from the bottom left hand corner removed.



In spite of their being featured continually in the Soviet press, only about twenty of these vehicles have ever actually appeared and it is probable that they are only just completing their troop trials stage.

BRDM (2)



BRDM (2)

The following details are now confirmed intelligence:

Weight: 6.7 metric tons

Armour thickness:

| | | | |
|------------------|---|---------|--------|
| Hull front upper | : | 13 mm | .5 in |
| Hull front lower | : | 13 mm | .5 in |
| Side upper | : | 6 mm | .24 in |
| Rear upper | : | 6 mm | .24 in |
| Turret-all round | : | 10.6 mm | .42 in |

Speed:

| | | | |
|----------------------|---|-----------|---------|
| Land | : | 95 kph | 59 mph |
| Water | : | 10-12 kph | 6-7 mph |
| Operating Range | : | 500 km | 310 m |
| Gap crossing ability | : | 1200 mm | 3.9 ft |
| Radio | : | R-123 | |
| Engine | : | 270 hp | |
| Ground clearance | : | 370 mm | 14.5 in |

ASU-85

The presence of two metal cowls projecting from the apertures on the main armament mantlet on the airborne assault gun ASU-85 has caused much speculation as to their possible use.



A probable explanation for these cowls can be inferred from the photograph showing ASU-85 "looking operational" with a fabric mantlet cover. Here the two metal cowls can be seen to be holding the windows in the mantlet cover in position so that they do not obscure the apertures in the metal gun mantlet itself.

Bearing in mind the wider angle of vision which the left hand cowl allows, it is probable that this one protects the gunner's sight while the other, narrower cowl, performs a similar function for a co-axial machine gun. This also allows for the gunner to be seated on the opposite side of the vehicle to the commander.

2. New Anti-Armour Weapon (CONFIDENTIAL)

Possible New Soviet Anti-Tank Weapon B-1968(?)



This photograph from the Soviet magazine SMENA suggests that the Soviets may have developed a new anti-armour weapon to complement the rocket-assisted shoulder-controlled RPG-7. Superficially the tube resembles the now obsolescent 82-mm B-10 Recoilless Gun but scalings reveal that it is longer and has a smaller calibre of about 75 mm. In addition, it appears to be equipped with a spotting rifle, the first so employed on Soviet recoilless equipment.

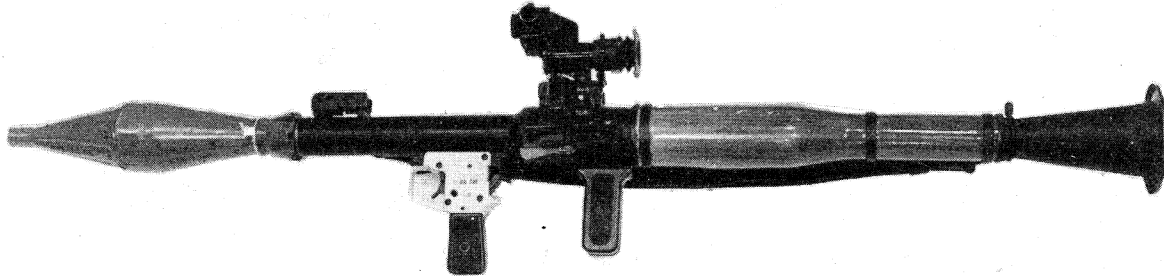
The grenade looks to be a thinner version of the PG-7 round (85 mm warhead) with a large bag-charge booster on the fin assembly. It can reasonably be expected to be rocket-assisted.

Comments

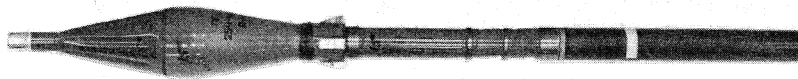
This application of a rocket-assisted round to the recoilless gun is considered to be an attempt to achieve a relatively light system with an effective range of about 1000 metres. This would give a reasonable overlap with the minimum range of the Soviet anti-tank guided missiles now in service, something which neither the B-10 nor the RPG-7 can do due to their 500 metres effective range.

At present, ATGMs are tactically supported by towed direct-fire, high-velocity, anti-tank guns. Because of the greater mobility of the ATGM systems, obstacles can separate these two elements. Such a system as the B-1968(?) would overcome this difficulty as its portability would enable it to be air-lifted across any obstacle. The airborne helmets on two of the crew to some extent support this idea.

Although the warhead diameter is reduced in the B-1968(?) vis-a-vis the RPG-7 and B-10, Soviet HEAT techniques have improved to the extent that penetration figures of over four projectile diameters are possible. Hence the penetration of this system is expected to be slightly in excess of 300 mm (12 inches) at normal in homogeneous steel armour.



RPG-7 Anti-Tank Grenade Launcher



PG-7 85-mm Rocket Assisted A/TK Grenade



**B-10 82-mm Recoilless Gun and
Ammunition**

3. PMK-DGN Assault Rifle (CONFIDENTIAL)

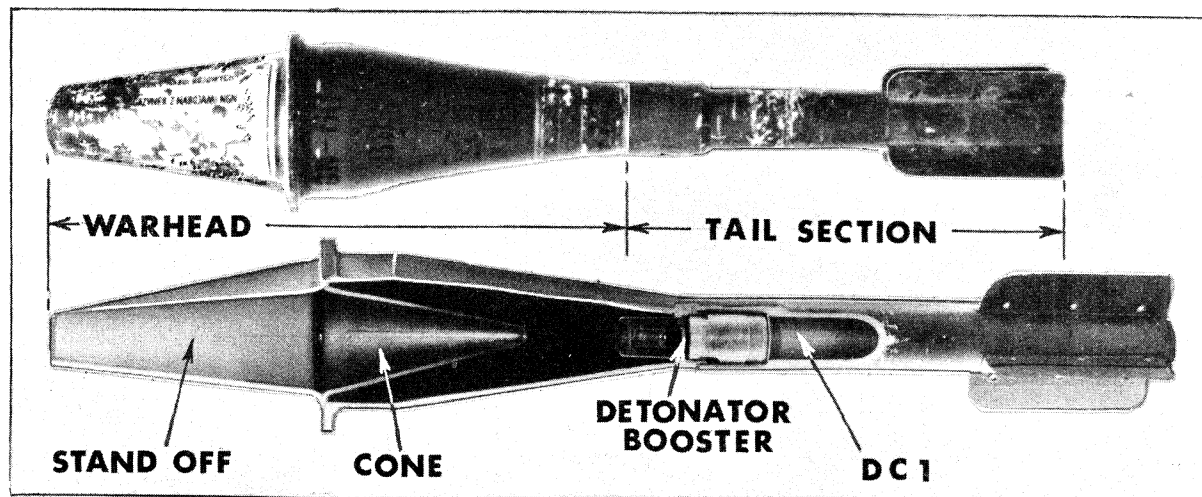
Polish Version of 7.62 mm Assault Rifle AK with Grenade Launching Modification & Ammunition

Copies of the PMK-DGN and associated grenades (see ATIR "Digest" No 88 pages 81 and 82) have been captured in Vietnam. Better photography and more detailed information on this weapon and the PGN-60 HEAT grenade are therefore available.



All the modifications required to enable the PMK to launch the F1-N60 and PGN-60 grenades are indicated in this illustration. Only the gas cut-off valve and two catches on the butt which retain the buffer pad are permanent modifications; none of the modifications interfere with normal firing of the weapon provided a proper magazine is used.

When firing the F1-N60 fragmentation grenade an indirect sight is used with high angle fire. Estimated range (elevation) is put on the sight and azimuth is obtained by aligning the barrel with the target. For this reason, best alignment is achieved by a second man standing behind the firer.

PGN-60 Grenade**PGN-60 HEAT Grenade**

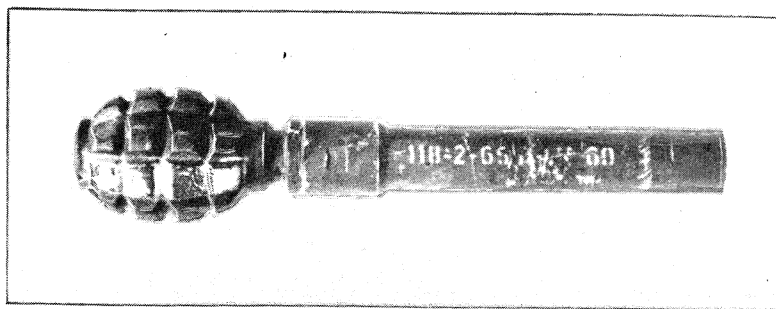
The following data has become available:

| | | |
|------------------------------------|------------------|---------|
| Length (Overall) | 406 mm | 16.0 in |
| Length (Warhead) | 250 mm | 9.85 in |
| Length (Tail Section) | 177 mm | 6.97 in |
| Maximum Head Diameter (over crimp) | 68 mm | 2.67 in |
| Nominal Head Diameter | 59.5 mm | 2.34 in |
| Nominal Stand-off | 96 mm | 3.78 in |
| Cone angle | 34° | |
| Overall Weight | 582 grams | 1.28 lb |
| Warhead Weight | 447 grams | 0.98 lb |
| Explosive Weight | 210 grams | 0.46 lb |
| Explosive Mixture | RDX, TNT, Tetryl | |

Fuse DC-1 positive gas pressure and set-back armed, base detonating, impact/inertia fuse.

Maximum effective range 100 m.

This is a well made, robust HEAT rifle grenade of almost conventional design. The most noteworthy feature is the inclusion of a wave shaping device in the design of the detonator/booster element. This device had however been seen previously in some Soviet HEAT warheads.

F1-N60**F1-N60 Anti-Personnel Grenade**

No new information other than that reported in ATIR "Digest" 88 Page 81 is available.

4. Chinese Communist Infantry Weapons

Markings (CONFIDENTIAL)

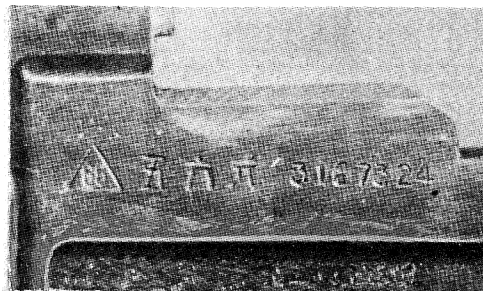
Factory markings from Communist Chinese produced weapons obtained in the Far East and Africa indicate that special batches have been manufactured for use by insurgent forces.

The weapons themselves are identical to those supplied to the Chinese Peoples' Army but are marked in a way that conceals their origin. No Chinese characters are given and type designations are different from those normally used.

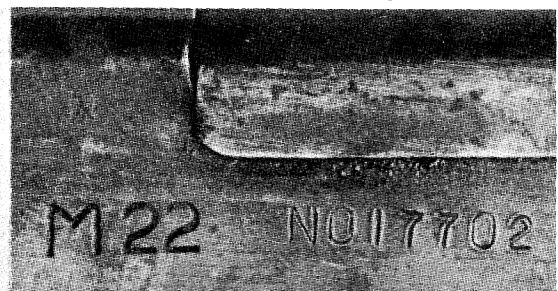
The illustrations show the original Soviet designed and produced infantry weapons which have been copied by Communist China. The Soviet nomenclature is shown in each case together with both the normal and special or 'sanitized' Chinese designations and the location of the main factory markings which is the same for both Soviet and Chinese weapons. Two examples of the Chinese markings are illustrated.



SOVIET 7.62-mm Assault Rifle KALASHNIKOV AK-47

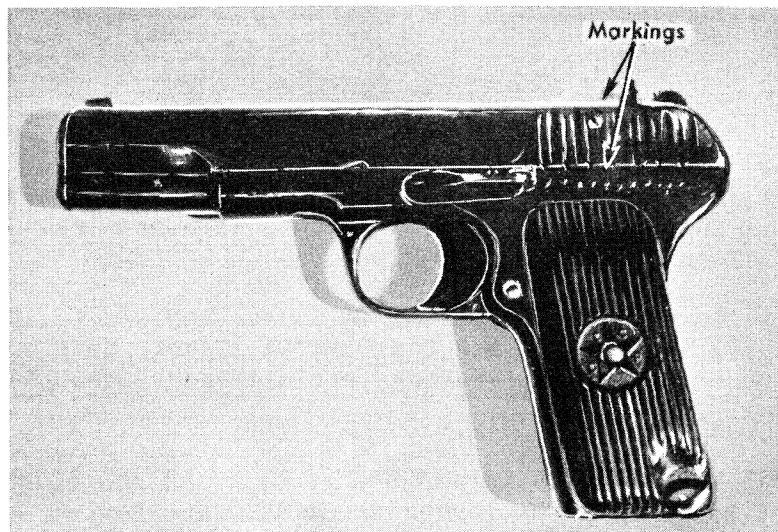


**Chinese Communist
Type 56**

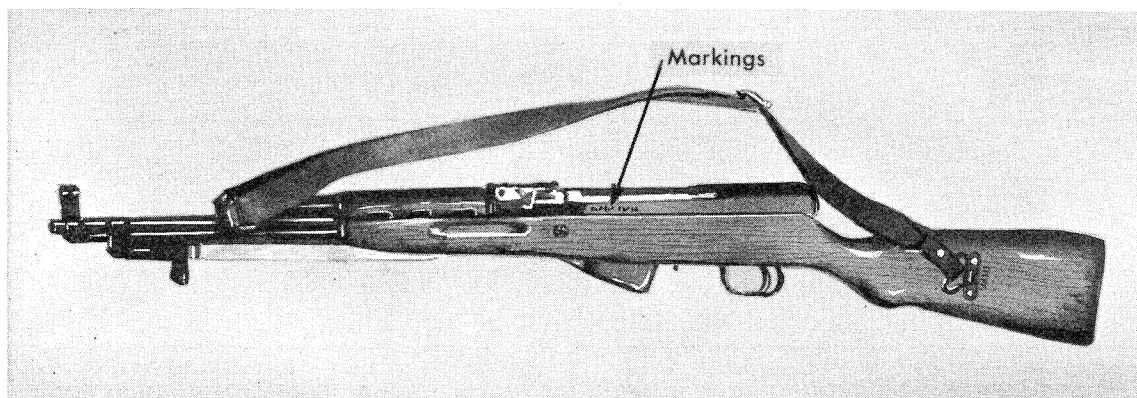


**Chinese Communist
M22 (Sanitized Type 56)**

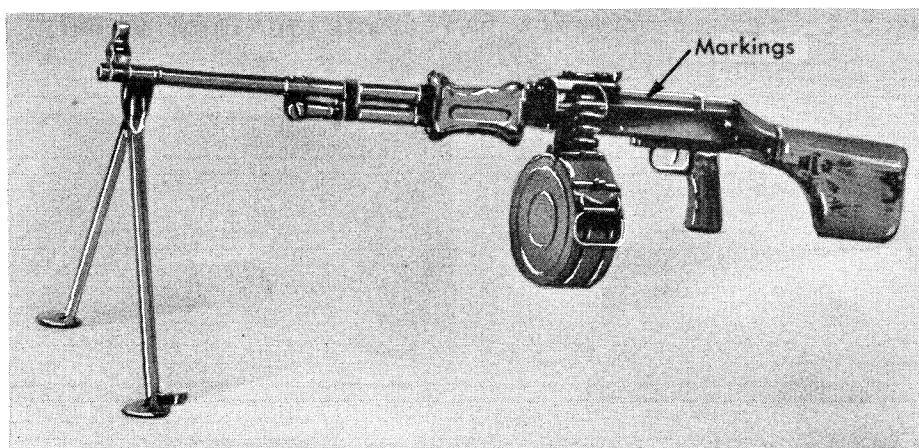
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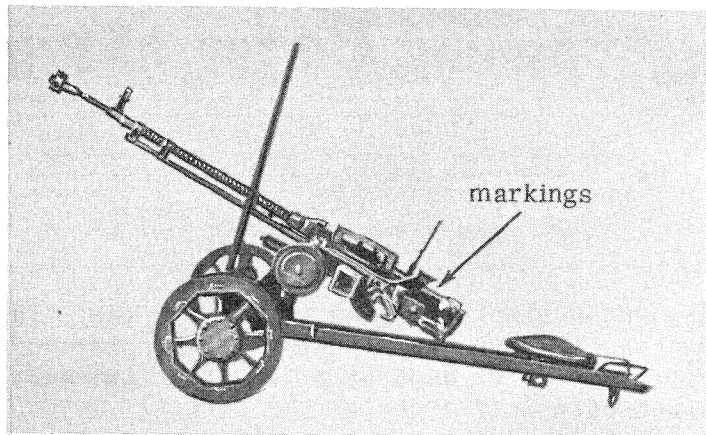
SOVIET 7.62-mm Pistol TOKAREV M1933 TT-33
COMMUNIST CHINA Type 54 and M20 (San)



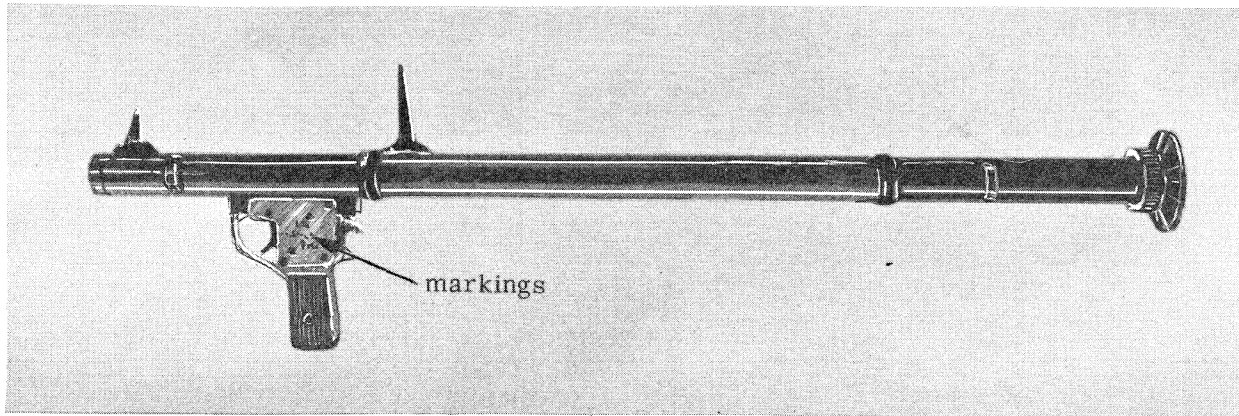
SOVIET 7.62-mm Carbine SIMONOV SKS
COMMUNIST CHINA Type 56 and M21 (San)



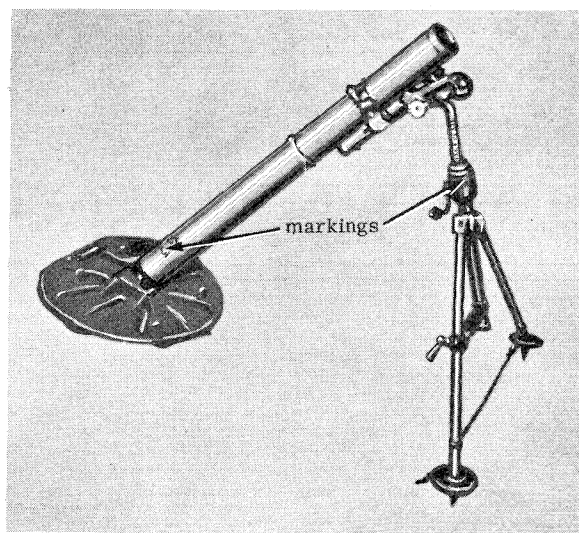
SOVIET 7.62-mm Light Machine Gun DEGTYAREV RPD
COMMUNIST CHINA Type 56 and M23 (San)



SOVIET 12.7-mm Heavy Machine Gun
COMMUNIST CHINA Type 54 and M17 (San)



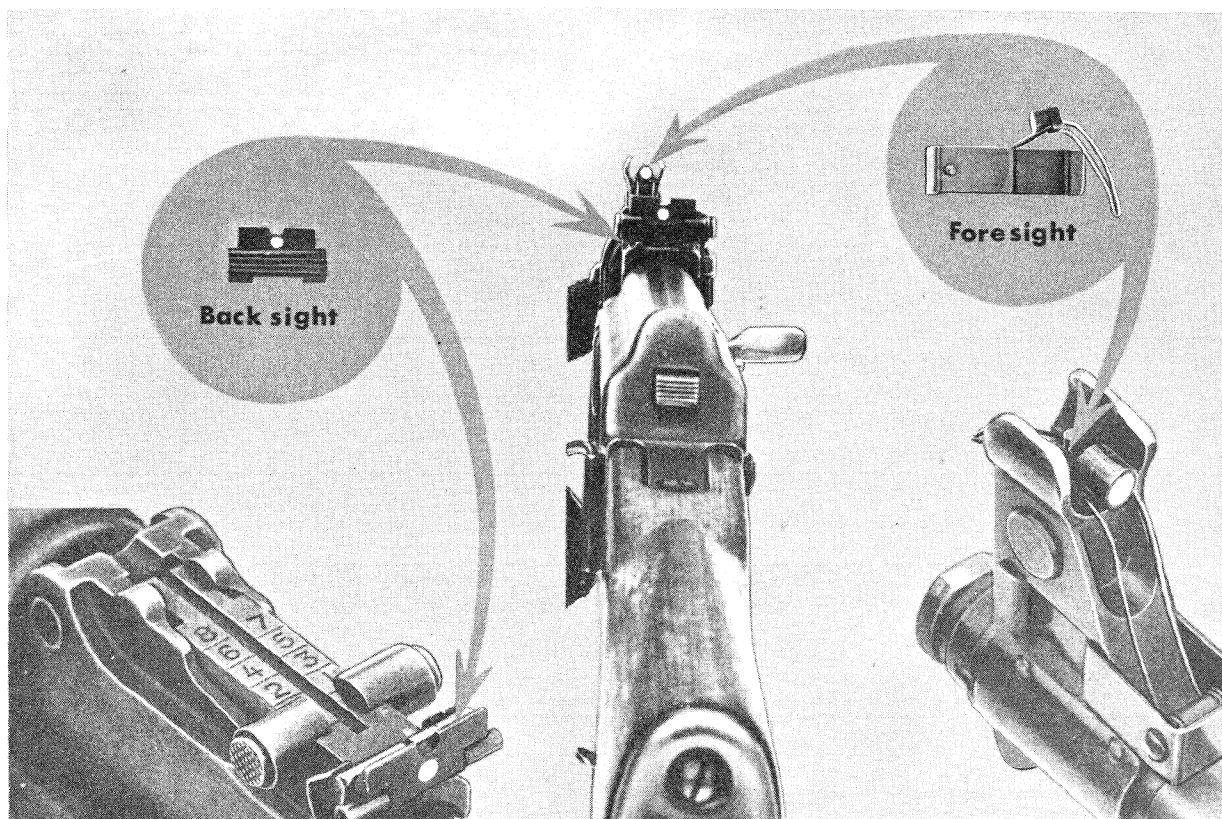
SOVIET Anti-Tank Grenade Launcher RPG-2
COMMUNIST CHINA Type 56 and M7 (San)



SOVIET 82-mm Mortar M1937
COMMUNIST CHINA Type 53 and M10 (San)

5. Soviet Night Aiming Aid for AKS (SECRET)

By the use of these two simple clip-on units with their luminous dots, the Soviet infantryman can improve his hit probability against dark targets in low visibility conditions by as much as a factor of two merely by being able to align his weapon more accurately on the target.



Soviet Night Aiming Aid Kit for AKS

6. Mine Warfare Notes (CONFIDENTIAL)

Non Metallic Anti-Tank Mine

In June 1968 a non-metallic anti-tank mine was found in Vietnam. The mine which has an olive green plastic case is detonated by a pressure activated chemical fuze. The mine is undetectable by conventional detectors but can be located by prodding.

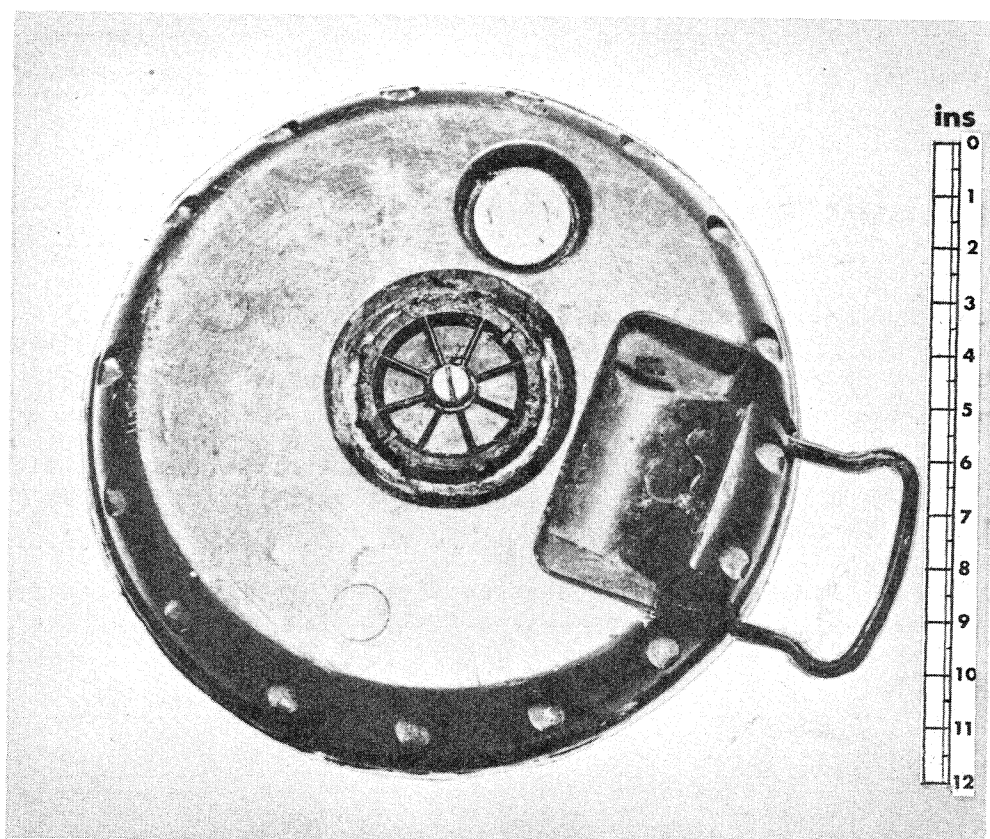
The origin of the mine is not certain but its fabrication indicates that it was produced in a country with advanced technological capabilities - possibly USSR or East Germany.

The mine can disable a tank or destroy wheeled or light tracked vehicles as it has approximately 22 lb of explosive (TNT). The diameter of the mine is 320 mm (12.6 in) and is 117 mm (4.6 in) high.

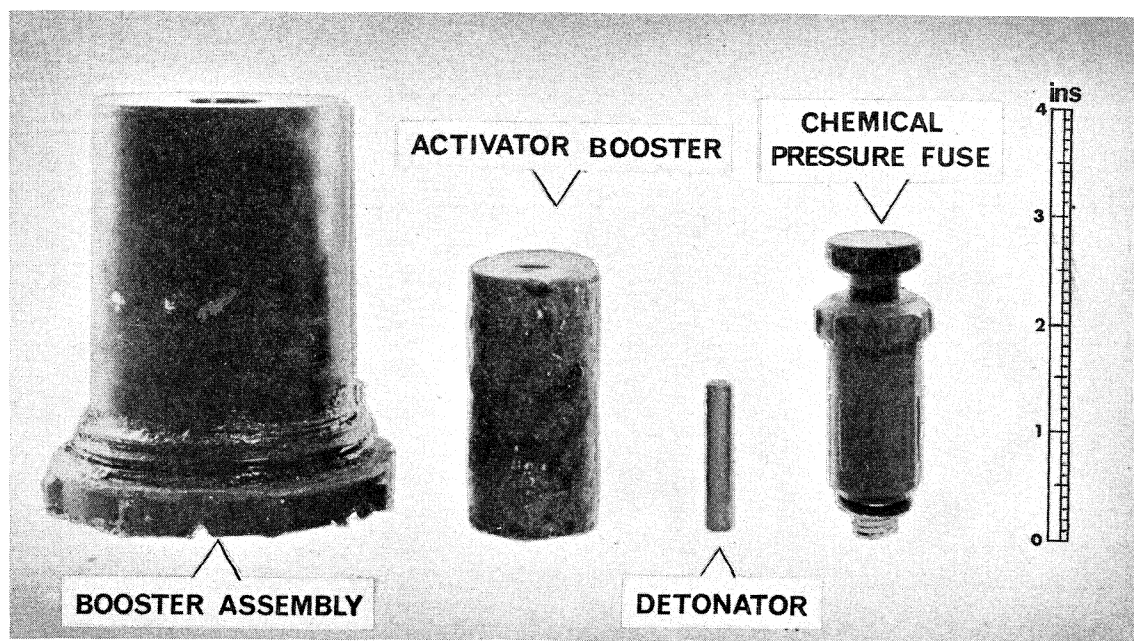


Top of Mine in Armed Position

SECRET



Bottom. Booster Assembly seated into Booster Well

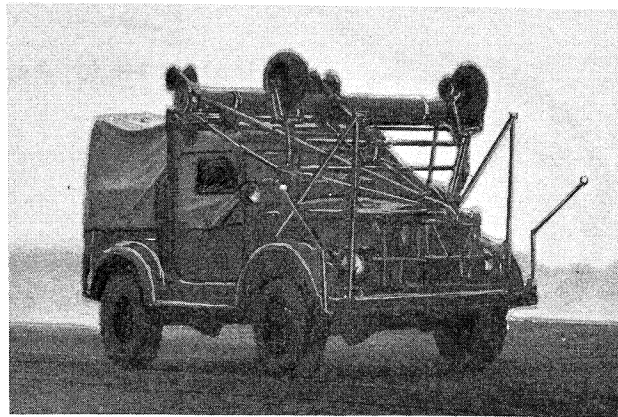


Components

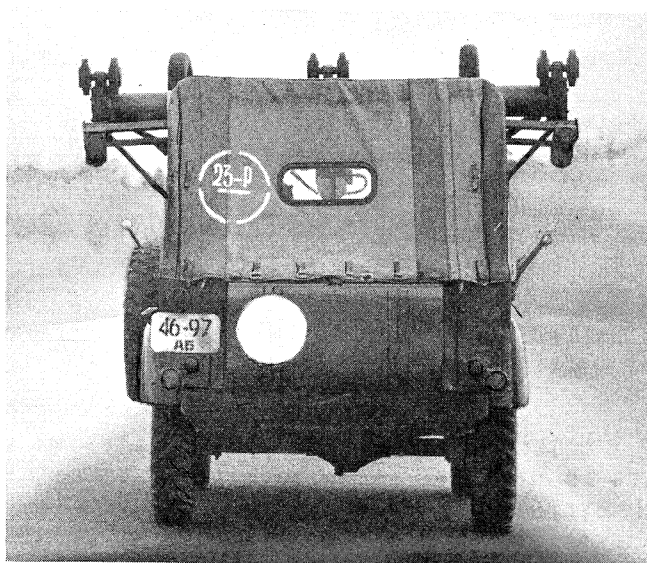
Soviet DIM Vehicle Mounted Mine Detector

The original version of this detector first appeared mounted on the UAZ/GAZ-69 during 1963. The latest photography shows a modified version mounted on the same vehicle.

The method of operation is that the detector is lowered to the search position and when a metallic object is encountered the vehicle automatically halts. The operating speed of the vehicle is 6 to 9 mph and the detection width is from 1.5 to 2.2 metres (5 to 7.25 ft).



DIM Detector on UAZ-69
Front View

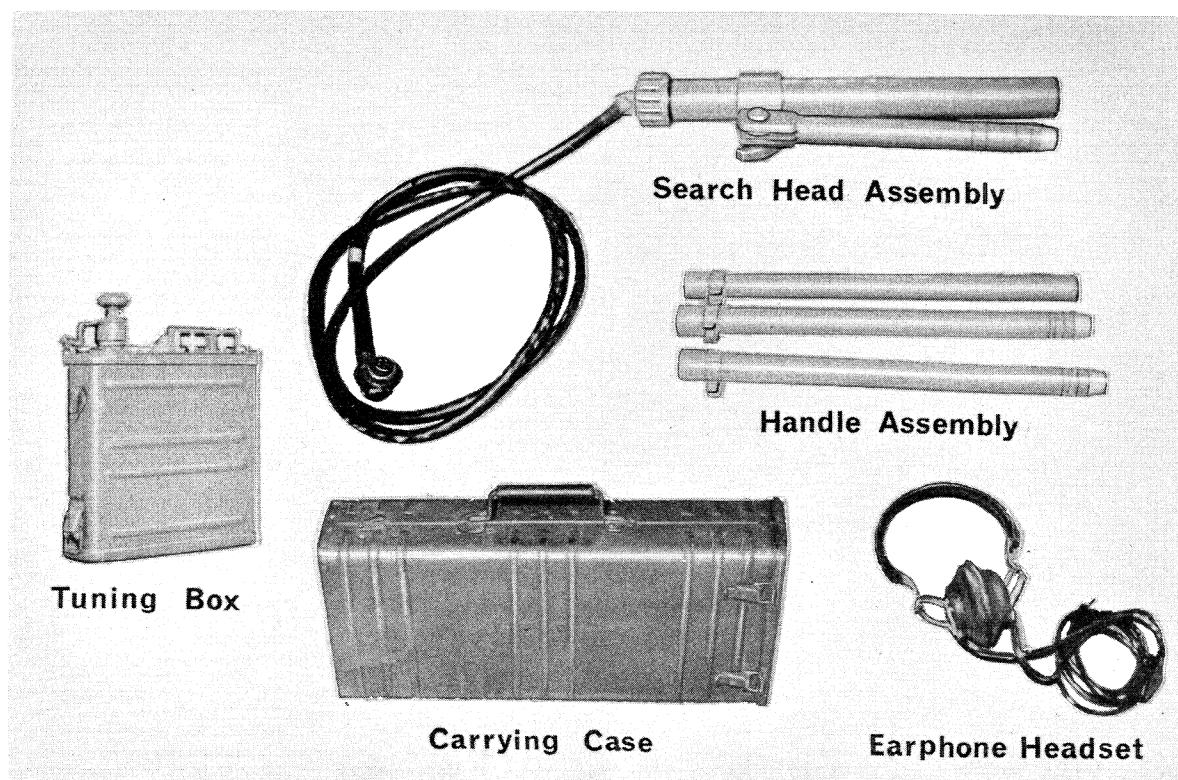


DIM Detector on UAZ-69
Rear View

Mine Detector Model IMP

US forces in Vietnam recently captured a Soviet IMP mine detector. This is the first reported Soviet mine detector captured in Vietnam.

The detector is lightweight, portable, transistorized and capable of detecting buried metallic mines up to a depth of one metre. The detector set consists of a tuning box (amplifier and battery pack), a headset assembly, a search head assembly, a handle assembly and a carrying case. The total weight of all components is 13.25 lb. This detector is NOT capable of detecting non-metallic mines.

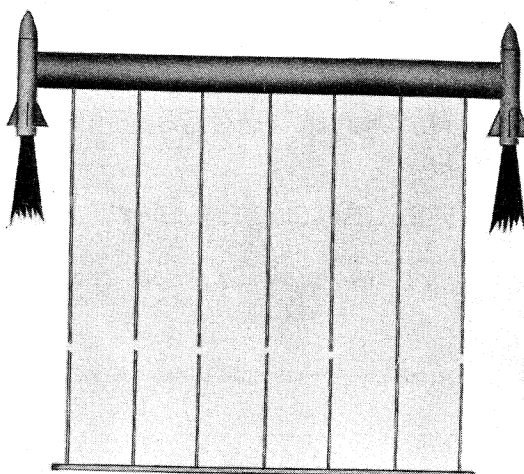


IMP Mine Detector-Component Parts

Rocket Propelled Minefield Clearing Device

Czechoslovakia has reported the production of a rocket powered device for clearing minefields called PRUNA 3. This device is claimed to clear a path four metres wide for tanks and infantry and details are alleged to be as follows.

It consists of a hollow metal pipe approximately two metres long and eight to twelve centimetres in diameter. Two rockets of unknown power rating can be attached one on each extremity of the pipe. Suspended behind and attached to the pipe are seven streamers of plastic explosive at least twelve metres long. The streamers which resemble garden hose are attached at the other end to another much thinner metal pipe which prevents entanglement in flight.



Plan of PRUNA 3 Mine Clearing Device

The front pipe is propelled horizontally by the two rockets at the extremities which pull the seven explosive streamers behind. The PRUNA 3 maximum range is stated as 1000 metres and the plastic streamers explode before impact giving maximum blast effect. The device can be fired from the ground or from vehicles.

From the report, the inherent problems of guidance in this type of system have been overcome but we do not know how this was achieved.

Soviet use of Mine-clearing Ploughs

The Soviets have been using ploughs for mine-clearance on T-54 and T-55 tanks since 1967. Most recent photography shows ploughs fitted to the T-62 tank.

The equipment consists of two strong hydraulically operated ploughs, with tines, fitted at an angle one in front of each track. The size of a plough is 1066 mm (42 in) long approximately with a blade depth of 304 mm (12 in). The five tines fitted to the blade give a further depth of 228 mm (9 in) approximately.

A Soviet press caption refers to the device as the "Soviet Mine-Clearance Tank".

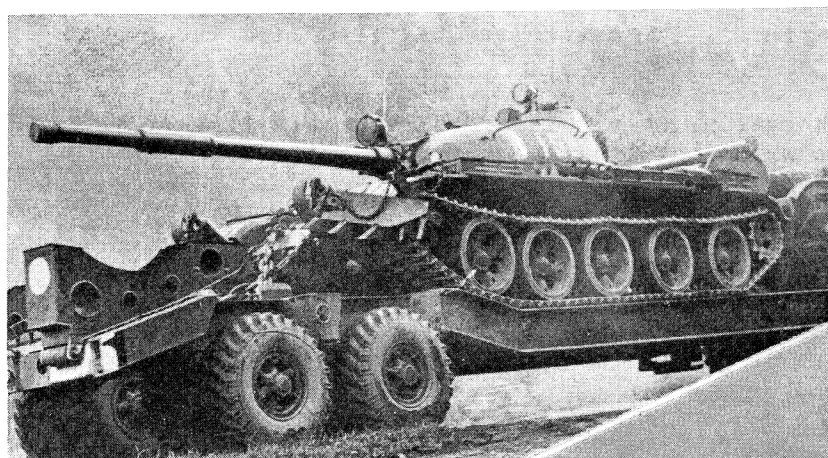


The possible method of operation is that when a minefield is located, the blades are hydraulically lowered and mines are dozed out and thrown away from the path of the tank track. Follow-up troops could deal with the removed mines.

The ploughs have some major advantages which are:

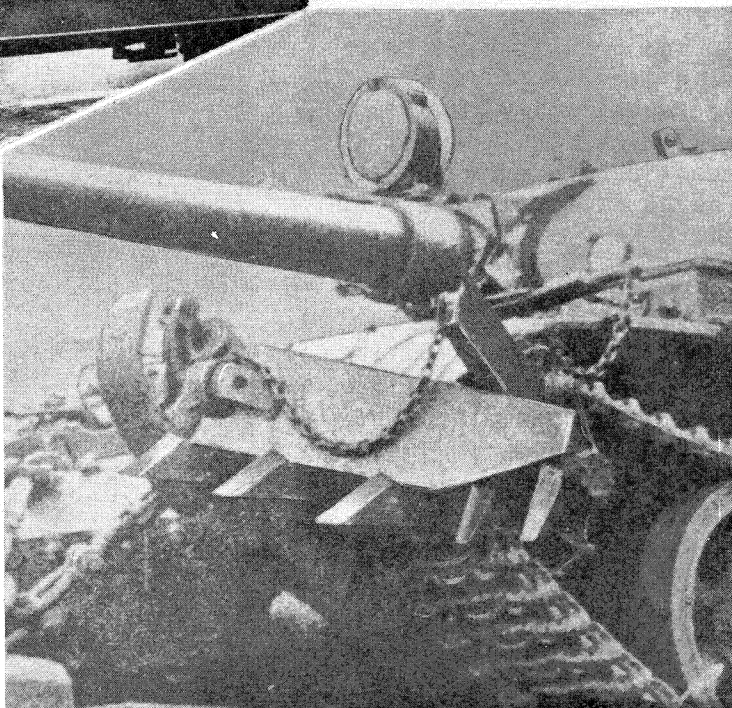
- a. The manoeuvrability of the tank is much greater than when fitted with rollers.
- b. The ploughs are of simple construction which would allow cheap mass production.
- c. Replacement due to mine damage should be simple and inexpensive.

It is therefore our assessment that the appearance of these ploughs indicates a trend in Soviet mineclearance and it is thought that the ploughs will be used as a major means of breaching minefields.



**T-62
Fitted with
Plough**

**Close up
of Plough**

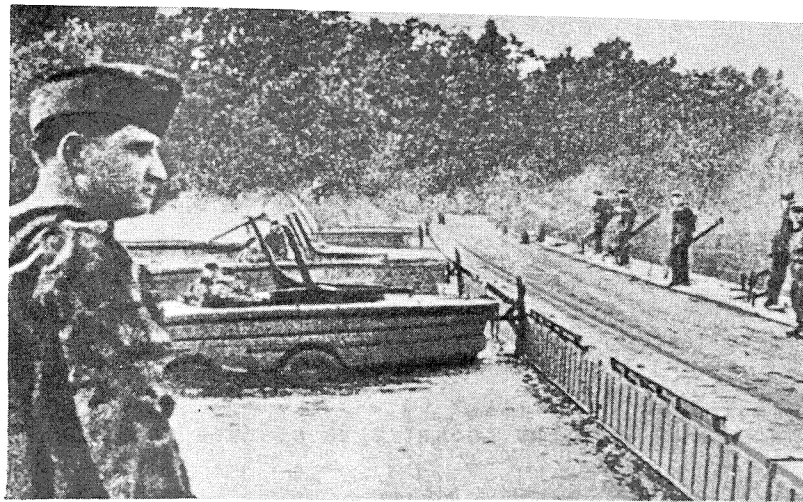


7. PMP Bridging (CONFIDENTIAL)

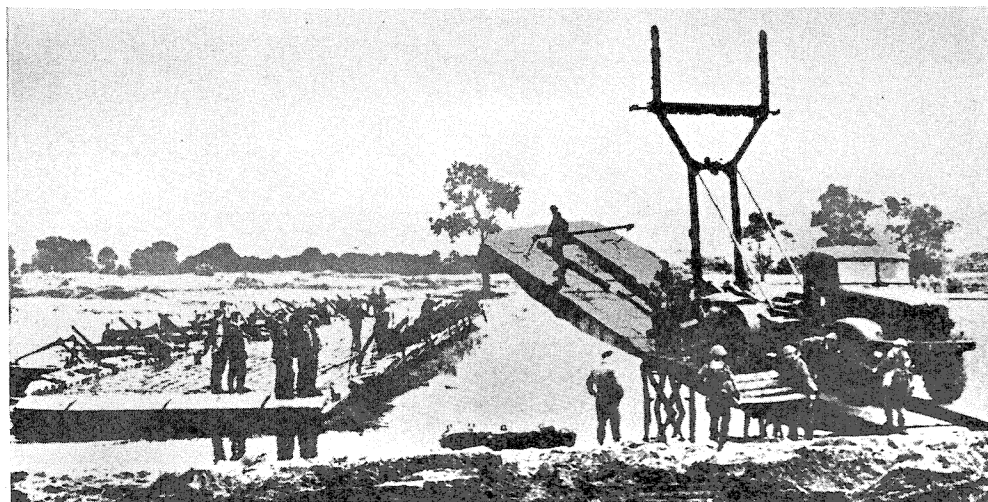
PMP used as Class 20 Bridge & with TMM

The Soviet Heavy Pontoon Bridge PMP (see ATIR 89 Part 1) can be constructed as a Class 20 bridge. The Soviets state that the construction is simple as the Class 60 bridge is divided along its longitudinal axis by uncoupling the two halves of each section after launching. The bridge, when used as Class 20, requires "wave breakers" to be fitted to maintain stability. It is claimed to be stable in currents up to 2.5 metres per second (8.20 fps).

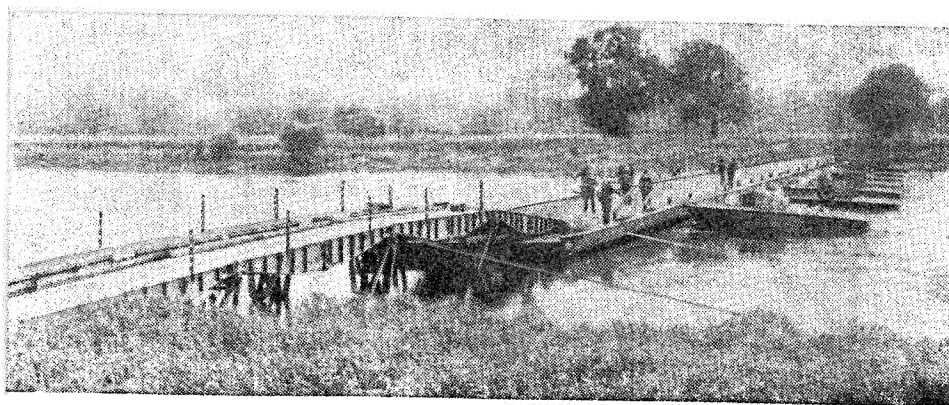
This again shows the versatility of this excellent equipment which can be used as a Class 60 or Class 20 bridge or as a ferry. Photography shows PMP combined with TMM to overcome the problems of construction across rivers with shallow depths near the banks.



Being used as Class 20 Bridge



PMP combined with TMM



Combined TMM and PMP Bridge

Czech Designation of PMP Bridge Equipment

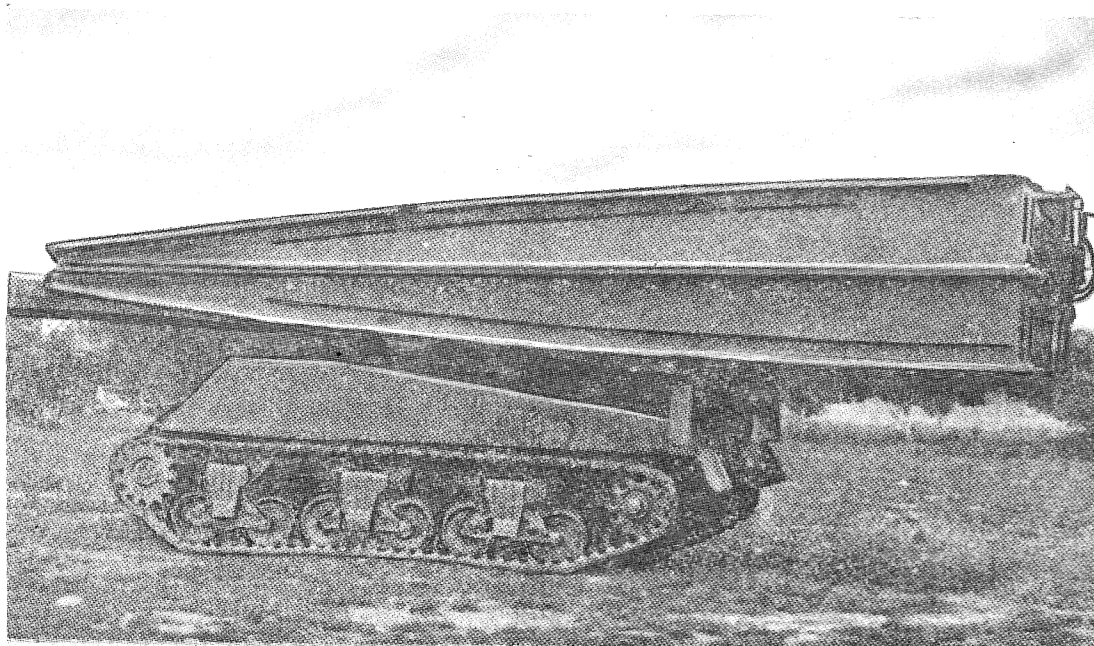
The Soviet PMP Bridge equipment is designated PMS in the Czechoslovak Peoples Army and is transported on the TATRA-138. For transport loading and unloading purposes, the TATRA-138 truck uses the same lifting equipment and fasteners as the Soviet KRAZ-214.

8. Yugoslav Tank Launched Bridge (CONFIDENTIAL)

The Yugoslav newspaper "Borba" on 15th December 1968 published an article on home produced weapons. Included in this article were details of a tank launched scissors bridge.

The bridge is on a Sherman chassis and it is stated as being able to bridge gaps up to 18 metres (59 ft). The Load Class is 50 and it takes from 3 to 5 minutes to launch or recover.

It is thought that this bridge is a prototype only and that it is beyond the capacity of Yugoslav industry to produce the complete bridge.



Yugoslav Tank Launched Scissors Bridge

9. SALISH Front Cruise Missile (SECRET)

Soviet Requirement for Cruise Missiles

It became obvious to the Soviets early in their ballistic missile development programme that their tactical missile systems could not meet the operational requirements of a fast-moving battle. Their plans for the North-West European battle envisaged an average daily advance of 100 km. In these conditions their existing systems were unable to engage small, vital nuclear targets any appreciable distance away. This was because their systems had:

*** SHORT RANGE ***

*** BAD ACCURACY ***

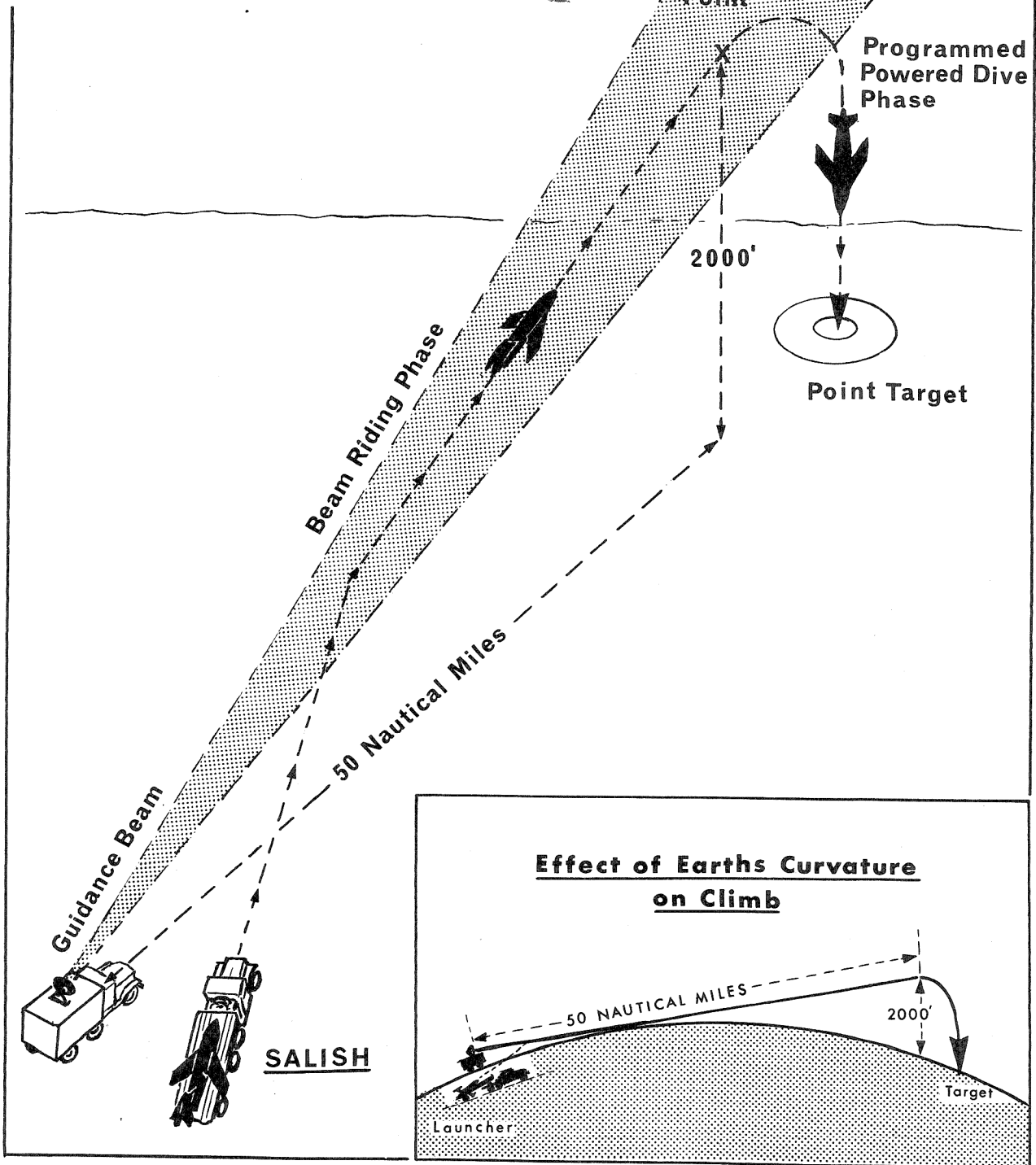
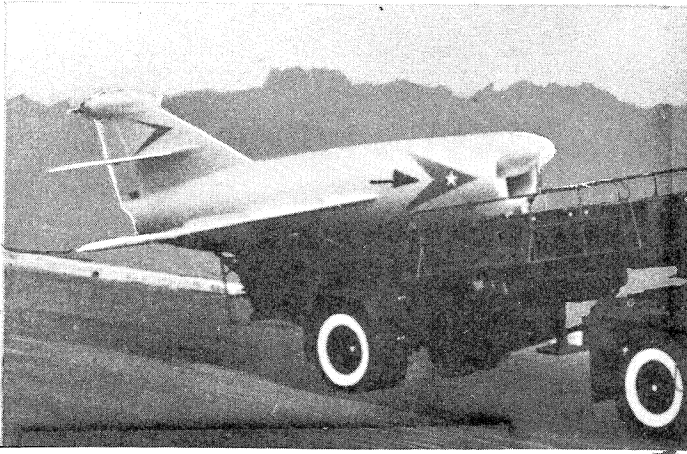
*** POOR ROAD MOBILITY ***

By the mid 50's the Soviets had developed as an interim solution, SALISH, a Surface-to-Surface version of the KENNEL Air-to-Surface Cruise Missile (basically a half size MIG-17, launched from a BADGER Bomber and guided with great accuracy on to a ground target). The Surface-to-Surface SALISH is launched into a radio beam in which it remains flying at a speed of 500 knots until it is close to and well above the target. At a pre-determined point in the sky (DUMP POINT) an impulse is sent that releases SALISH from the guidance beam. SALISH then starts a short, preplanned, powered dive which terminates on the target. The DUMP POINT is selected after the usual meteorological conditions have been taken into consideration. With this system high accuracy is achieved and point targets can be engaged successfully at ranges of at least 50 nm.

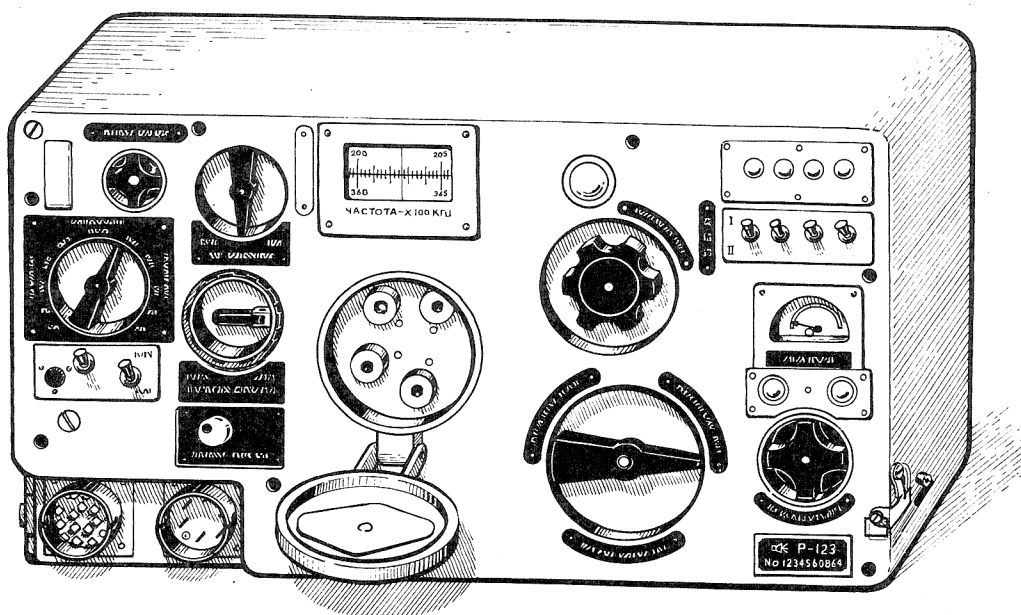
The price paid for this long range accuracy is a complicated system requiring considerable maintenance effort and a large quantity of support vehicles. The system cannot be used in hilly terrain and the missile has to climb steadily to remain in the beam which is elevated because of the earth's curvature. For example, SALISH could well have climbed to about 2000 ft by the time it was released over a target some 50 miles from the launcher. The system is vulnerable to ground fire.

Current Assessment

The improvements in current tactical ballistic missiles make SALISH obsolescent. However, it will probably remain in service in a secondary role for some time yet, both in the NUCLEAR and CHEMICAL version.



10. New Soviet Tank Radio R-123 (CONFIDENTIAL)



R-123

Artist's impression

Until recently the Soviets were held to have in service two tank radios, the R-112 and the R-113, details of which are given in MI Tech Review Supplement No 78 (July 1965) on pages 25 and 37 respectively.

In the latter half of 1968 information was received of a third radio, the R-123, which was being installed in place of the R-113 in "Command" versions of the T-55 Tank and the BTR-60PB APC in certain countries outside the USSR. It has since been confirmed in the Soviet BRDM(2) light recce vehicle.

Whether it has replaced the R-113 in all Soviet Command Tanks and Armoured Command Vehicles is not at the moment known. Neither is it definitely known whether it is a general replacement for the R-113 in all other types of AFVs, but it is beginning to look as if it may be.

Though in appearance it resembles the R-112 and R-113, there are very strong indications that it is a "Second Generation" R-Series set using the sub-miniature "rod-type" valves (as are used in the R-105M) and also that its receiver is partially transistorised. Its Power Supply Unit is fully transistorised, unlike those of the R-112 and R-113 which use rotary converters.

SECRET

Its frequency range (20-51.5 MHz) covers the complete frequency spectrum of the current Soviet Field Army VHF FM radio sets (see table below) and represents a major departure from their previous narrow-band practice.

| SET | MEGAHERTZ | | | | | USER ARM. |
|-----------------|------------|---------|---------|-----------|----|----------------------------------|
| | 20 | 30 | 40 | 50 | 60 | |
| R-123 | 20 | | | 51.5 | | ARMOUR |
| R-113 | 20 22-37.5 | | | | | ARMOUR |
| R-114 M | 20 26 | | | | | INF- ARMOUR |
| R-109M | 21 28.5 | | | | | A/Tk. AND A.D. ARTY. |
| R-108M | | 28 36.5 | | | | ARTY. |
| R-105 M | | | 36 46.1 | | | INF. |
| R-126 | | | | 48.5 51.5 | | INF. PL. |
| BRITISH C 42 | | | 36 | | 60 | ARMOUR AND GENERAL PURPOSE |

Comparative Frequency Coverage Table

In addition to selecting frequencies by "free tuning", four frequencies anywhere in its frequency range can be pre-set. The operator can change over from the free-tuned selected frequency to any of the pre-set frequencies at the flick of a switch. This would enable, for example, a Tank Company Commander to set up his Coy Net frequency on the free-tuning scale and to pre-set the frequencies of the Supporting Inf Coy Net (R-126), Inf Bn Net (R-105M), Arty Net (R-108M) and the AD Arty Net (R-109M).

Like the R-113, this new set has provision for VOICE operation of the transmitter switch in addition to the normal manual switch in the operators headset cable. An additional facility is an in-built oscillator which modulates the transmitted carrier with an audio tone when the "Tone Calling" button is pressed. This enables the operator to alert the other stations on the net without actually speaking. The same oscillator is used for calibrating the frequency scale, in a similar manner to that on the R-105 family of sets, to obviate the need for any "netting" drill.

SECRET

The inter-comm amplifier used is the R-124 which, unlike the R-120 used with the R-112/R-113 installation, is transistorised and has an additional switch position for communication with an external telephone.

Characteristics of the R-123 are as follows:-

Frequency: 20-51.5 MHz in TWO bands. Band I 20-35.75 MHz
Band II 35.75-51.5 MHz

RF Channel Spacing: 25 KHz.

No of RF Channels: 1261

Tuning: Free tuning with crystal calibration.
Four pre-set frequencies.

Modulation: FM (VOICE).

Modes of Operation: STANDBY RECEIVE
SIMPLEX (Press-to-talk operation)
DUPLEX (VOICE operated transmit switch)

Power Output: 20 watts.

Ranges: 2-5 km using 1 metre rod.
20 km using 4 metre rod.
40-70 km using telescopic mast.

Power Supply: 24v tank battery and VR-26 transistorised PSU
providing 1.2, 6.3, 150, 250 and 700 volts.

Dimensions: Length: 42 cm (16.53 in)
Depth: 20 cm (Estimated) (7.87 in)
Height: 22.5 cm (8.86 in) exclusive of shock
mounting plate.
Weight: 18.5 kg (Estimated) (41 lb)
exclusive of shock mounting plate.

The exact date of introduction of the R-123 into service in the Soviet Army is not known. However, as it is now being reported in armies other than Soviet, it is considered reasonable to assume that the Soviet Army's requirements have already been met. It is therefore estimated that it could have come into service in about 1965.

In our article on Soviet Regimental Radios in ATIR No 87 Part 1 of October 1967, we mentioned the British C42 as being the equivalent of the R-113, which has the same power output and range, but is slightly smaller and lighter. The R-113 however, with its very narrow frequency band, was markedly inferior in providing only 96 RF channels compared to the 241 of the C42 No 1, and is considered only marginally capable of providing the communication needs of the Soviet armour.

SECRET

In contrast, the R-123, which is also comparable in power output, range and size, has a wider frequency band than the C42 and by virtue of its 25 KHz channel spacing provides over 2½ times as many channels as the C42 No 2 (481 Chs). It also has provision for four "flick frequencies" and the "voice" operated transmitter switching facility, neither feature being provided on the British set.

It must therefore be concluded that the Soviets now have in service in their Armoured formations a radio set superior to that in the British Army, and fully capable of providing their communication needs.

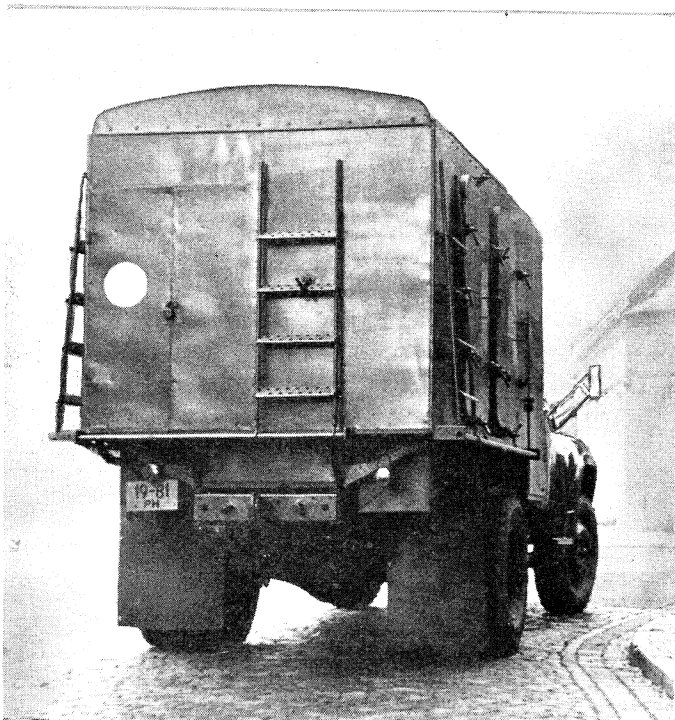
11. Decontamination/Shower Unit (CONFIDENTIAL)

Possible New Mobile Decontamination/Shower Unit DDA-53

What is believed to be a box-bodied version of the DDA-53 mobile decontamination and shower unit has been seen in East Germany mounted on a ZIL-130 chassis.

The side view shows that there are two compartments at the rear of the vehicle similar to those of the DDA-53 and 53A. The front view reveals two circular hatch covers in the roof of the box body. These are presumably located over the water tank and the boiler unit respectively.

FRONT VIEW



REAR VIEW

12. Corrigendum

ARMY TECHNICAL INTELLIGENCE REVIEW DIGEST No 88 JANUARY 1968

Soviet Bloc and Chinese Communist Infantry Weapons

In annexures "D" and "E" (pages 99 and 100) the notes under the headings in both cases should read "(MEASUREMENTS ARE IN INCHES, WEIGHTS IN GRAINS)".